## Conventions

When reading this document pay attention to the style of the text in the instructions.

Text in light grey regular font in the beginning of the line indicates the command prompt in the terminal:
(config)#

Text given in **boldface** should be entered exactly as shown:
# **ifdown** eth1

When there are several alternative parameters they are given separated with a vertical line. If it is mandatory to choose one of the alternatives they are given in braces:
(config)# **access−list** 10 {**permit**|**deny**} 192.168.0.1

Parameters that are optional to a command are given in square brackets:
# **show ip interface** [ **brief** ]

The variables where an actual value must be entered by the user are indicated in Italic:
(config−if)# **ip** *ADDRESS NETMASK*

Keyboard shortcuts are emphasized inline as ctrl + F

## Using Minicom

Start minicom:
# **minicom** [*PORT*]

When minicom is running anything typed into its terminal will be transmitted to the attached device. To interact with the minicom program itself the user must first type special escape key sequence - ctrl + A and then the next key will be intercepted by minicom program.
To quit minicom do ctrl + A then hit Z and confirm with Enter.

## Linux Workstations

| | |
|---|---|
| Display available interfaces and their states | # **ip link show** |
| Turning interfaces on and off | # **ip link** set {**up**\|**down**} **dev** *NAME* |
| Display configured addresses | # **ip** [−4\|−6] **address show** |
| Manage addresses on an interface | # **ip address** {**add**\|**delete**\|**change**} *ADDRESS*/*PREFIX* **dev** *NAME* |
| Display routing table of the host | # **ip** [−4\|−6] **route show** |
| Manage specific routes | # **ip route** {**add**\|**delete**} *ADDRESS*/*PREFIX* **via** *NEXTHOP* |
| Manage default route | # **ip route** {**add**\|**delete**} **default via** *NEXTHOP* |

## Cisco IOS devices

When configuring a Cisco device in the lab via a console connection remember that there are several management levels. You can tell current level from the command prompt:

| | |
|---|---|
| `>` | Unprivileged exec mode allows limited monitoring commands. |
| `#` | Privileged exec mode allows more specific monitoring commands. |
| `(config)#` | Global configuration mode allows general device config. |
| `(config-if)#` | Specific interface configuration mode. |

To enter privileged exec mode: `>` **enable**

To enter global config mode: `#` **configure terminal**

| *Operations with interfaces:* | |
|---|---|
| Display interfaces states | `#` **show ip interface** [**brief**] |
| Turn interface on/off | `(config)#` **interface** *TYPE NUMBER*<br>`(config-if)#` [**no**] **shutdown** |
| Set ipv4 address for the interface | `(config)#` **interface** *TYPE NUMBER*<br>`(config-if)#` **ip address** *ADDRESS NETMASK* |
| Set ipv6 address for the interface | `(config)#` **interface** *TYPE NUMBER*<br>`(config-if)#` **ipv6 address** *ADDRESS/PREFIX* [**eui-64**] |

| *Routing basics* | |
|---|---|
| Display routing table | `#` **show** {**ip**\|**ipv6**} **route** [*PREFIX*] |
| Add static route | `(config)#` **ip route** *ADDRESS NETMASK NEXTHOP* |

| *Operations with VLANs:* | |
|---|---|
| Assign vlan to interface | `(config)#` **interface** *TYPE NUMBER*<br>`(config-if)#` **switchport mode access**<br>`(config-if)#` **switchport access vlan** *X* |
| Set up trunk interface | `(config)#` **interface** *TYPE NUMBER*<br>`(config-if)#` **switchport mode trunk**<br>`(config-if)#` **switchport trunk allow vlan** *X*[,*Y* - *Z*]<br>`(config-if)#` **switchport trunk encapsulation dot1q** |

## General terminal shortcuts

ctrl + A - set cursor to the begining of the line.
ctrl + E - set cursor to the end of the line.
ctrl + W - delete one word to the left of the cursor.
? - list possible command answers
do + command - run command on upper level, for example:
`#` **show ip route** vs. `(config)#` do **show ip route**